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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/813,965	03/22/2001	Phillip G. Rorex	2700-101	2828

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ROTHWELL, FIGG, ERNST & MANBECK, P.C.  
1425 K STREET, N.W.  
SUITE 800  
WASHINGTON, DC 20005

EXAMINER

NOLAN, DANIEL A

ART UNIT	PAPER NUMBER
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2654

DATE MAILED: 05/21/2004

7

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/813,965

**Applicant(s)**

ROREX, PHILLIP G.

**Examiner**

Daniel A. Nolan

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 April 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-74 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-73 is/are allowed.
- 6) ☒ Claim(s) 74 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

### DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

#### ***Response to Amendment***

2. The filing of 29 April was entered to the following effect:
  - The specification was changed as indicated and the objection and rejection under 35 USC § 112 is withdrawn as satisfied.
  - Claims 73-74 were added and examined on the merits.

#### ***Response to Arguments***

3. Applicant's arguments (that the change to the specification provides a definition of "*transneme*" as a unique variant) see last 3 lines page 19, filed 29 April 2004, with respect to claims 1-72 have been fully considered and are persuasive. Therefore, the 35 USC § 112 and 35 USC § 103 rejections of claims 1-72 have been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Marley<sup>'813</sup>.

Regarding the argument that the invention is of a pioneering status, the newly-disclosed definition of the term simply applies a name to a feature that is well-known to

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persons of ordinary skill in the art of speech signal processing. Examination on the merits has established further that this named feature has been identified and employed in the application of prior art. Rather than being pioneering, the feature of *transneme* is one of semantics in ascribing an appellation to a previously unnamed conventional processing practice.

### ***Specification***

4. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested:

*"Speaker-Independent, Continuous Speech Recognition using Transnemes"*.

### ***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

**Marley**<sup>'813</sup>

6. Claim 74 is rejected under 35 U.S.C. 102(b) as being directly anticipated by

**Marley**<sup>'813</sup> (U.S. Patent 4,181,813 A).

7. Regarding claim 74, Marley<sup>'813</sup>, with the invention for a *system and method for speech recognition*, reads on every feature of the claim for *providing recognition on a voice stream* as follows:

- Marley<sup>'813</sup> reads on the feature of *extracting transnemes from a signal representing voice (by measuring the transitions between phonemes – see claim 1 lines 53-63)*.
- Marley<sup>'813</sup> reads on the feature of *converting “transnemes” into speech units* (column 19 lines 25-32).

#### ***Allowable Subject Matter***

8. Claims 1-27 and 73 are allowed.

9. The following is a statement of reasons for the indication of allowable subject matter:

- The invention is directed toward *recognizing speech by phoneme transitions, or “transnemes”*.
- Regarding claims 1, 19 and 73, the closest prior art of Kochanski et al<sup>'576</sup> for *performing text-to-speech conversion in a client/server environment* discloses that a *cache of phoneme transitions that cover all of the phoneme-to-phoneme transitions (i.e., diphones) of the given language* can be used to piece together *any sentence* in synthesizing speech (see column 9 lines 42-50) but the feature of using a

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transneme-to-vocabulary database for recognition was not anticipated nor was it found in obvious combination.

- Regarding claims 28 and 46, the feature of mapping a frequency spectrum difference between a current frequency spectrum frame and a previous frequency spectrum frame to a transneme table is neither anticipated nor found in obvious combination in the prior art of record.
- Claims 2-18, 20-27, 29-45 and 47-72 depend on claims that were found to be allowable.

### **Conclusion**

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Marley<sup>'846</sup> (U.S. Patent 4,284,846 A) system and method for sound recognition.
- Buth et al (U.S. Patent Publication 2002/0029139 A1) method of composing messages for speech output, in claim 5 discloses *that the last or first letters, syllables or phonemes of the preceding or following segment in the original sentence are used as transition values.*
- Kochanski et al<sup>'646</sup> (U.S. Patent Publication 2002/0103646 A1) method and apparatus for performing text-to-speech conversion in a client/server environment discloses that *as is typical of what are known as "concatenative" text-to-speech systems (such as those illustratively described herein), the synthesized speech is based on such a database of speech sounds, which includes, minimally, a set of audio segments that cover all of the phoneme-to-phoneme transitions*
- Kayama et al (U.S. Patent Publication 2003/0009344 A1) singing voice-synthesizing method and apparatus and storage medium where *phonetic unit transition time length and a state transition time length are retrieved from a phonetic unit transition DB (database) 14b (see figure 15).*
- Kochanski et al<sup>'576</sup> (U.S. Patent 6,625,576 B2) for performing text-to-speech conversion in a client/server environment discloses that *the cache may contain a permanent set of audio segments that cover all phoneme transitions.*

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12. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Daniel A. Nolan at telephone (703) 305-1368 whose normal business hours are Mon, Tue, Thu & Fri, from 7 AM to 5 PM.

If attempts to contact the examiner by telephone are unsuccessful, supervisor Richemond Dorvil can be reached at (703)305-9645.

The fax phone number for Technology Center 2600 is (703)872-9314. Label informal and draft communications as "DRAFT" or "PROPOSED", & designate formal communications as "EXPEDITED PROCEDURE". Formal response to this action may be faxed according to the above instructions,

or mailed to: Mail Stop AF (or CPA, etc. – see Official Gazette, 04 November 2003)  
P.O. Box 1450  
Alexandria, VA 22313-1450

or hand-deliver to: Crystal Park 2,  
2121 Crystal Drive, Arlington, VA,  
Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to Technology Center 2600 Customer Service Office at telephone number (703) 306-0377.

Daniel A. Nolan  
Examiner  
Art Unit 2654

DAN/d  
May 15, 2004

  
RICHEMOND DORVIL  
SUPERVISORY PATENT EXAMINER